Whisper Creek Emissions Methodology

The emissions methodology for the Whisper Creek Subdivision project utilizes a combination of Urbemis 2002 (version 8.7) and construction equipment estimates from the Sacramento Metropolitan Air Quality Management District's (SMAQMD) *Guide to Air Quality Assessment* (2004) Table 3.1 (revised). Both Urbemis and the SMAQMD Guide calculate the maximum daily acres disturbed during construction as one quarter of the total project site. For Whisper Creek, the project site excluding open space lots is approximately 45 acres which results in a maximum daily disturbed acreage of 11.25 acres.

Utilizing Table 3.1 (revised) "Construction Activity Equipment Types and Number Requirements" of the SMAQMD Guide, the expected number and types of construction equipment were determined for a maximum 11.25 daily acres disturbed for the Whisper Creek project. Table 3.1 is based upon 10 acres disturbed and SMAQMD recommends that the number of equipment for 10 acres be multiplied by a factor representing the expected disturbed acres for the specific project. This results in fractional pieces of equipment which can be used to accurately manually estimate emissions using the SMAQMD Equipment Emissions Rate in the SMAQMD Guide. However, Urbemis will not calculate fractional pieces of equipment. For the Whisper Creek project, the equipment needed for 10 acres disturbed was entered into Urbemis and the table below uses the multiplier for 11.25 acres to show the expected worst case emissions of ROG and NOx before mitigation.

Urbemis used the 11.25 acres of maximum disturbed acres to calculate the PM_{10} emissions from grading ground disturbance, so the multiplier was not used for PM_{10} emissions.

ROG and NOx Emissions for 11.25 acres Maximum Daily Acreage Disturbed for Whisper Creek Construction							
ROG (unmitigated)				NOx (unmitigated)			
	Urbemis Emissions with equipment for 10 acres disturbed	Multiplier for actual maximum acreage disturbed of 11.25 acres	Expected emissions for 11.25 acres disturbed		Urbemis Emissions with equipment for 10 acres disturbed	Multiplier for actual maximum acreage disturbed of 11.25 acres	Expected emissions for 11.25 acres disturbed
Grading Worst case ROG	19.81	x 1.125	22.29	Grading Worst case NOx	134.10	x 1.125	150.86
Building & asphalt Worst case ROG	213.11	x 1.125	239.75	Building and asphalt Worst case NOx	62.18	x 1.125	69.95

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\Whisper Creek Subdivision.u
Project Name: Whisper Creek Subdivision
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Summer)

CONSTRUCTION EMISSION ESTIMATES

*** 2006 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	19.81	134.10	161.85	0.00	118.33	5.82	112.51

*** 2007 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	6.68	47.79	51.93	0.00	2.19	2.12	0.07

*** 2008 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	213.11	62.18	78.48	0.01	2.52	2.37	0.15

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	9.21	1.32	4.03	0.03	0.01

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	7.50	7.87	80.67	0.05	7.71
TOTALS (lbs/day, mitigated)	7.37	7.70	78.98	0.04	7.55

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	16.71	9.19	84.70	0.08	7.73

Both Area and Operational Mitigation must be turned on to get a combined mitigated total.

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\Whisper Creek Subdivision.u
Project Name: Whisper Creek Subdivision
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

SUMMARY REPORT
(Pounds/Day - Winter)

CONSTRUCTION EMISSION ESTIMATES

*** 2006 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	19.81	134.10	161.85	0.00	118.33	5.82	112.51

*** 2007 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	6.68	47.79	51.93	0.00	2.19	2.12	0.07

*** 2008 ***	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
TOTALS (lbs/day,unmitigated)	213.11	62.18	78.48	0.01	2.52	2.37	0.15

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	67.76	3.35	108.52	0.26	16.10

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	7.84	11.81	91.98	0.05	7.71
TOTALS (lbs/day, mitigated)	7.68	11.56	90.05	0.04	7.55

SUM OF AREA AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10
TOTALS (lbs/day,unmitigated)	75.61	15.16	200.51	0.30	23.81

Both Area and Operational Mitigation must be turned on to get a combined mitigated total.

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\Whisper Creek Subdivision.u
Project Name: Whisper Creek Subdivision
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Winter)

Construction Start Month and Year: June, 2006
Construction Duration: 24
Total Land Use Area to be Developed: 45 acres
Maximum Acreage Disturbed Per Day: 11.25 acres
Single Family Units: 104 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 0

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2006***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	112.50	-	112.50
Off-Road Diesel	19.60	133.86	157.45	-	5.81	5.81	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.21	0.24	4.40	0.00	0.02	0.01	0.01
Maximum lbs/day	19.81	134.10	161.85	0.00	118.33	5.82	112.51
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	6.23	49.82	44.34	-	2.30	2.30	0.00
Bldg Const Worker Trips	0.49	0.29	6.23	0.00	0.07	0.00	0.07
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	6.72	50.11	50.56	0.00	2.38	2.31	0.07
Max lbs/day all phases	19.81	134.10	161.85	0.00	118.33	5.82	112.51
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	6.23	47.51	46.08	-	2.12	2.12	0.00
Bldg Const Worker Trips	0.46	0.28	5.85	0.00	0.07	0.00	0.07
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	6.68	47.79	51.93	0.00	2.19	2.12	0.07
Max lbs/day all phases	6.68	47.79	51.93	0.00	2.19	2.12	0.07

*** 2008***

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	6.23	45.21	47.76	-	1.93	1.93	0.00
Bldg Const Worker Trips	0.42	0.26	5.45	0.00	0.07	0.00	0.07
Arch Coatings Off-Gas	202.39	-	-	-	-	-	-
Arch Coatings Worker Trips	0.42	0.26	5.45	0.00	0.07	0.00	0.07
Asphalt Off-Gas	1.22	-	-	-	-	-	-
Asphalt Off-Road Diesel	2.24	12.97	19.01	-	0.36	0.36	0.00
Asphalt On-Road Diesel	0.18	3.47	0.66	0.01	0.08	0.08	0.00
Asphalt Worker Trips	0.01	0.01	0.15	0.00	0.00	0.00	0.00
Maximum lbs/day	213.11	62.18	78.48	0.01	2.52	2.37	0.15
Max lbs/day all phases	213.11	62.18	78.48	0.01	2.52	2.37	0.15

Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jun '06
Phase 2 Duration: 2.6 months
On-Road Truck Travel (VMT): 0
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
3	Crawler Tractors	143	0.575	8.0
1	Graders	174	0.575	8.0
2	Off Highway Trucks	417	0.490	8.0
1	Rubber Tired Loaders	165	0.465	8.0
1	Scrapers	313	0.660	8.0
2	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Aug '06
Phase 3 Duration: 21.4 months
Start Month/Year for SubPhase Building: Aug '06
SubPhase Building Duration: 21.4 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
3	Other Equipment	190	0.620	8.0

Start Month/Year for SubPhase Architectural Coatings: Mar '08
SubPhase Architectural Coatings Duration: 2.1 months
Start Month/Year for SubPhase Asphalt: Apr '08
SubPhase Asphalt Duration: 1.1 months
Acres to be Paved: 11.3
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Pavers	132	0.590	8.0
1	Rollers	114	0.430	8.0

AREA SOURCE EMISSION ESTIMATES (Winter Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	0.10	1.30	0.55	0	0.00
Hearth	59.03	2.04	107.97	0.26	16.09
Landscaping - No winter emissions					
Consumer Prdcts	5.09	-	-	-	-
Architectural Coatings	3.54	-	-	-	-
TOTALS(lbs/day,unmitigated)	67.76	3.35	108.52	0.26	16.10

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing	7.84	11.81	91.98	0.05	7.71
TOTAL EMISSIONS (lbs/day)	7.84	11.81	91.98	0.05	7.71

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2008 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Single family housing	34.67	9.57 trips/dwelling unit	104.00	995.28
		Sum of Total Trips		995.28
		Total Vehicle Miles Traveled		5,073.71

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.00	1.60	98.00	0.40
Light Truck < 3,750 lbs	15.00	2.70	95.30	2.00
Light Truck 3,751- 5,750	16.20	1.20	97.50	1.30
Med Truck 5,751- 8,500	7.20	1.40	95.80	2.80
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.40	0.00	50.00	50.00
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.70	76.50	23.50	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.20	8.30	83.30	8.40

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	9.7	3.8	4.6	7.8	4.5	4.5
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	27.3	21.2	51.5			

MITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing	7.68	11.56	90.05	0.04	7.55
TOTAL EMISSIONS (lbs/day)	7.68	11.56	90.05	0.04	7.55
PERCENTAGE REDUCTION %	2	2	2	2	2

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2008 Temperature (F): 40 Season: Winter

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Single family housing	34.67	9.37 trips/dwelling unit	104.00	974.38
		Sum of Total Trips		974.38
		Total Vehicle Miles Traveled		4,967.16

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.00	1.60	98.00	0.40
Light Truck < 3,750 lbs	15.00	2.70	95.30	2.00
Light Truck 3,751- 5,750	16.20	1.20	97.50	1.30
Med Truck 5,751- 8,500	7.20	1.40	95.80	2.80
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.40	0.00	50.00	50.00
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.70	76.50	23.50	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.20	8.30	83.30	8.40

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	9.7	3.8	4.6	7.8	4.5	4.5
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	27.3	21.2	51.5			

MITIGATION OPTIONS SELECTED

Residential Mitigation Measures
==========

Residential Pedestrian/Bicycle Friendliness Mitigation

Percent Reduction in Trips is 2.1% (calculated as a % of 9.57 trips/day)
Note that the above percent is applied to a baseline of 9.57 and that product is subtracted from the Unmitigated Trips
Inputs Selected:
The Number of Intersections per Square Mile is 0
The Percent of Streets with Sidewalks on One Side is 40%
The Percent of Streets with Sidewalks on Both Sides is 0%
The Percent of Arterials/Collectors with Bike Lanes or where Suitable, Direct Parallel Routes Exist is 50%

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

Changes made to the default values for Area

The landscape year changed from 2005 to 2008.

Changes made to the default values for Operations

The pass by trips option switch changed from off to on.
The mitigation option switch changed from off to on.
The operational emission year changed from 2005 to 2008.
The Res and Non-Res Ped/Bike Mitigation changed from off to on.

URBEMIS 2002 For Windows 8.7.0

File Name: C:\Program Files\URBEMIS 2002 Version 8.7\Projects2k2\Whisper Creek Subdivision.u
Project Name: Whisper Creek Subdivision
Project Location: Lower Sacramento Valley Air Basin
On-Road Motor Vehicle Emissions Based on EMFAC2002 version 2.2

DETAIL REPORT
(Pounds/Day - Summer)

Construction Start Month and Year: June, 2006
Construction Duration: 24
Total Land Use Area to be Developed: 45 acres
Maximum Acreage Disturbed Per Day: 11.25 acres
Single Family Units: 104 Multi-Family Units: 0
Retail/Office/Institutional/Industrial Square Footage: 0

CONSTRUCTION EMISSION ESTIMATES UNMITIGATED (lbs/day)

Source	ROG	NOx	CO	SO2	PM10 TOTAL	PM10 EXHAUST	PM10 DUST
*** 2006***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	112.50	-	112.50
Off-Road Diesel	19.60	133.86	157.45	-	5.81	5.81	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.21	0.24	4.40	0.00	0.02	0.01	0.01
Maximum lbs/day	19.81	134.10	161.85	0.00	118.33	5.82	112.51
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	6.23	49.82	44.34	-	2.30	2.30	0.00
Bldg Const Worker Trips	0.49	0.29	6.23	0.00	0.07	0.00	0.07
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	6.72	50.11	50.56	0.00	2.38	2.31	0.07
Max lbs/day all phases	19.81	134.10	161.85	0.00	118.33	5.82	112.51
*** 2007***							
Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	6.23	47.51	46.08	-	2.12	2.12	0.00
Bldg Const Worker Trips	0.46	0.28	5.85	0.00	0.07	0.00	0.07
Arch Coatings Off-Gas	0.00	-	-	-	-	-	-
Arch Coatings Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Off-Gas	0.00	-	-	-	-	-	-
Asphalt Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
Asphalt On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Asphalt Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	6.68	47.79	51.93	0.00	2.19	2.12	0.07
Max lbs/day all phases	6.68	47.79	51.93	0.00	2.19	2.12	0.07

*** 2008***

Phase 1 - Demolition Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 2 - Site Grading Emissions							
Fugitive Dust	-	-	-	-	0.00	-	0.00
Off-Road Diesel	0.00	0.00	0.00	-	0.00	0.00	0.00
On-Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum lbs/day	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phase 3 - Building Construction							
Bldg Const Off-Road Diesel	6.23	45.21	47.76	-	1.93	1.93	0.00
Bldg Const Worker Trips	0.42	0.26	5.45	0.00	0.07	0.00	0.07
Arch Coatings Off-Gas	202.39	-	-	-	-	-	-
Arch Coatings Worker Trips	0.42	0.26	5.45	0.00	0.07	0.00	0.07
Asphalt Off-Gas	1.22	-	-	-	-	-	-
Asphalt Off-Road Diesel	2.24	12.97	19.01	-	0.36	0.36	0.00
Asphalt On-Road Diesel	0.18	3.47	0.66	0.01	0.08	0.08	0.00
Asphalt Worker Trips	0.01	0.01	0.15	0.00	0.00	0.00	0.00
Maximum lbs/day	213.11	62.18	78.48	0.01	2.52	2.37	0.15
Max lbs/day all phases	213.11	62.18	78.48	0.01	2.52	2.37	0.15

Phase 1 - Demolition Assumptions: Phase Turned OFF

Phase 2 - Site Grading Assumptions
Start Month/Year for Phase 2: Jun '06
Phase 2 Duration: 2.6 months
On-Road Truck Travel (VMT): 0
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
3	Crawler Tractors	143	0.575	8.0
1	Graders	174	0.575	8.0
2	Off Highway Trucks	417	0.490	8.0
1	Rubber Tired Loaders	165	0.465	8.0
1	Scrapers	313	0.660	8.0
2	Tractor/Loaders/Backhoes	79	0.465	8.0

Phase 3 - Building Construction Assumptions
Start Month/Year for Phase 3: Aug '06
Phase 3 Duration: 21.4 months
Start Month/Year for SubPhase Building: Aug '06
SubPhase Building Duration: 21.4 months
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
3	Other Equipment	190	0.620	8.0

Start Month/Year for SubPhase Architectural Coatings: Mar '08
SubPhase Architectural Coatings Duration: 2.1 months
Start Month/Year for SubPhase Asphalt: Apr '08
SubPhase Asphalt Duration: 1.1 months
Acres to be Paved: 11.3
Off-Road Equipment

No.	Type	Horsepower	Load Factor	Hours/Day
1	Pavers	132	0.590	8.0
1	Rollers	114	0.430	8.0

AREA SOURCE EMISSION ESTIMATES (Summer Pounds per Day, Unmitigated)

Source	ROG	NOx	CO	SO2	PM10
Natural Gas	0.10	1.30	0.55	0	0.00
Hearth - No summer emissions					
Landscaping	0.48	0.01	3.47	0.03	0.01
Consumer Prdcts	5.09	-	-	-	-
Architectural Coatings	3.54	-	-	-	-
TOTALS(lbs/day,unmitigated)	9.21	1.32	4.03	0.03	0.01

UNMITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing	7.50	7.87	80.67	0.05	7.71
TOTAL EMISSIONS (lbs/day)	7.50	7.87	80.67	0.05	7.71

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2008 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Single family housing	34.67	9.57 trips/dwelling unit	104.00	995.28
		Sum of Total Trips		995.28
		Total Vehicle Miles Traveled		5,073.71

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.00	1.60	98.00	0.40
Light Truck < 3,750 lbs	15.00	2.70	95.30	2.00
Light Truck 3,751- 5,750	16.20	1.20	97.50	1.30
Med Truck 5,751- 8,500	7.20	1.40	95.80	2.80
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.40	0.00	50.00	50.00
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.70	76.50	23.50	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.20	8.30	83.30	8.40

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	9.7	3.8	4.6	7.8	4.5	4.5
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	27.3	21.2	51.5			

MITIGATED OPERATIONAL EMISSIONS

	ROG	NOx	CO	SO2	PM10
Single family housing	7.37	7.70	78.98	0.04	7.55
TOTAL EMISSIONS (lbs/day)	7.37	7.70	78.98	0.04	7.55
PERCENTAGE REDUCTION %	2	2	2	2	2

Includes correction for passby trips.
Does not include double counting adjustment for internal trips.

OPERATIONAL (Vehicle) EMISSION ESTIMATES

Analysis Year: 2008 Temperature (F): 85 Season: Summer

EMFAC Version: EMFAC2002 (9/2002)

Summary of Land Uses:

Unit Type	Acreage	Trip Rate	No. Units	Total Trips
Single family housing	34.67	9.37 trips/dwelling unit	104.00	974.38
		Sum of Total Trips		974.38
		Total Vehicle Miles Traveled		4,967.16

Vehicle Assumptions:

Fleet Mix:

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	55.00	1.60	98.00	0.40
Light Truck < 3,750 lbs	15.00	2.70	95.30	2.00
Light Truck 3,751- 5,750	16.20	1.20	97.50	1.30
Med Truck 5,751- 8,500	7.20	1.40	95.80	2.80
Lite-Heavy 8,501-10,000	1.10	0.00	81.80	18.20
Lite-Heavy 10,001-14,000	0.40	0.00	50.00	50.00
Med-Heavy 14,001-33,000	1.00	0.00	20.00	80.00
Heavy-Heavy 33,001-60,000	0.90	0.00	11.10	88.90
Line Haul > 60,000 lbs	0.00	0.00	0.00	100.00
Urban Bus	0.20	0.00	50.00	50.00
Motorcycle	1.70	76.50	23.50	0.00
School Bus	0.10	0.00	0.00	100.00
Motor Home	1.20	8.30	83.30	8.40

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	9.7	3.8	4.6	7.8	4.5	4.5
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip Speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	27.3	21.2	51.5			

MITIGATION OPTIONS SELECTED

Residential Mitigation Measures
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Residential Pedestrian/Bicycle Friendliness Mitigation

Percent Reduction in Trips is 2.1% (calculated as a % of 9.57 trips/day)
Note that the above percent is applied to a baseline of 9.57 and that product is subtracted from the Unmitigated Trips
Inputs Selected:
The Number of Intersections per Square Mile is 0
The Percent of Streets with Sidewalks on One Side is 40%
The Percent of Streets with Sidewalks on Both Sides is 0%
The Percent of Arterials/Collectors with Bike Lanes or where Suitable, Direct Parallel Routes Exist is 50%

Changes made to the default values for Land Use Trip Percentages

Changes made to the default values for Construction

Changes made to the default values for Area

The landscape year changed from 2005 to 2008.

Changes made to the default values for Operations

The pass by trips option switch changed from off to on.
The mitigation option switch changed from off to on.
The operational emission year changed from 2005 to 2008.
The Res and Non-Res Ped/Bike Mitigation changed from off to on.